

269.1001.01 (was 214.1001.01)

09/910,445

IN THE CLAIMS:

1. (Proposed Amendment) A method of scheduling jobs ~~doing business~~ including the steps of:

receiving at least one job to be processed from at least one customer;

estimating a time for completion of processing for said at least one job to be processed;

placing each of said at least one job to be processed in a queue of jobs to be processed;

sorting said queue of jobs to be processed;

scheduling said at least one job to be processed, wherein said job is scheduled to be performed by processing resources that are already reserved for another larger job if said at least one job to be processed can be processed by those reserved processing resources before other processing resources required for said larger job are available;

configuring dynamically the size of at least one cluster of processing resources from a pool of processing resources responsive to at least one attribute of said job to be processed;

processing said at least one job to be processed from said queue of jobs to be processed by assigning said at least one job to be processed to said at least one cluster of processing resources; and

269.1001.01 (was 214.1001.01)

09/910,445

making a result of said processing of said at least one job to be processed available to said at least one customer;

wherein said step of configuring dynamically a pool of processing resources into at least one cluster of processing resources responsive to at least one attribute of said at least one job to be processed further includes the steps of:

saving said cluster of processing resources from said pool of processing resources as they become available such that they are earmarked for creating a specific cluster to be used for processing said at least one job to be processed;

saving a configuration file on said cluster of processing resources; and

rebooting said cluster of processing resources to configure dynamically said cluster of processing resources for processing of said at least one job to be processed.

2. (Previously Presented) A method of claim 1, wherein said receiving further includes at least one attribute specific to said at least one job to be processed including at least one of the following attributes: (1) priority of processing, (2) type of processing, and (3) a tolerance time.

3. (Original) A method as in claim 2, wherein said step of sorting said queue of jobs to be processed includes consideration of said request for priority of processing of said at least one job to be processed.

269.1001.01 (was 214.1001.01)

09/910,445

4. (Previously Presented) A method of claim 2, wherein said tolerance time includes a time for completion acceptable to said at least one customer that is later in time than the estimated time for completion, and said step of querying includes offering a fee discount to said at least one customer for said tolerance time.

5. (Previously Presented) A method as in claim 4, wherein said step of sorting said queue of jobs to be processed includes consideration of said tolerance time attributed to said at least one job to be processed.

6. (Original) A method as in claim 1, wherein the step of estimating a time for completion of processing of said at least one job to be processed further includes the step of confirming said time for completion of processing with said at least one customer.

7. (Cancelled)

8. (Original) A method as in claim 1, wherein said making a result of said processing of said at least one job to be processed available to said at least one customer further includes charging a fee for said result.

9. (Original) A method as in claim 8, wherein said fee is based on said time for completion of processing for said at least one job to be processed.

269.1001.01 (was 214.1001.01)

09/910,445

10. (Proposed Amendment) An apparatus including

means for receiving at least one job to be processed from at least one customer;

means for estimating a time for completion of processing for said at least one job to be processed;

means for placing each of said at least one job to be processed in a queue of jobs to be processed;

means for sorting said queue of jobs to be processed;

means for scheduling said at least one job to be processed, wherein said job is scheduled to be performed by processing resources that are already reserved for another larger job if said at least one job to be processed can be processed by those reserved processing resources before other processing resources required for said larger job are available;

means for configuring dynamically the size of at least one cluster of processing resources from a pool of processing resources responsive to at least one attribute of said job to be processed;

means for processing said at least one job to be processed from said queue of jobs to be processed by assigning said at least one job to be processed to said at least one cluster of processing resources; and

means for making a result of said processing of said at least one job to be processed available to said at least one customer;

269.1001.01 (was 214.1001.01)

09/910,445

wherein said means for configuring dynamically a pool of processing resources into at least one cluster of processing resources responsive to at least one attribute of said at least one job to be processed further includes:

means for saving said cluster of processing resources from said pool of processing resources as they become available such that they are earmarked for creating a specific cluster to be used for processing said job to be processed;

means for saving a configuration file on said cluster of processing resources; and

means for rebooting said cluster of processing resources to configure dynamically said cluster of processing resources for processing of said at least one job to be processed.

11. (Previously Presented) An apparatus of claim 10, wherein said means for receiving further includes at least one attribute specific to said at least one job to be processed including at least one of the following attributes: (1) priority of processing, (2) type of processing, and (3) a tolerance time.

12. (Original) An apparatus as in claim 11 wherein said means for sorting said queue of jobs to be processed includes consideration of said request for priority of processing of said at least one job to be processed.

13. (Previously Presented) An apparatus of claim 11, wherein said tolerance time includes a time for completion acceptable to said at least one customer that is later in time than

269.1001.01 (was 214.1001.01)

09/910,445

the estimated time for completion, and said means for querying offers a fee discount to said at least one customer for said tolerance time.

14. (Previously Presented) An apparatus as in claim 13, wherein means for sorting said queue of jobs to be processed includes consideration of said tolerance time attributed to said at least one job to be processed.

15. (Original) An apparatus as in claim 10, wherein said means for estimating a time for completion of processing of said at least one job to be processed further includes means for confirming said time for completion of processing with said at least one customer.

16. (Cancelled)

17. (Original) An apparatus as in claim 10, wherein said means for making a result of said processing of said at least one job to be processed available to said at least one customer further includes means for charging a fee for said result.

18. (Original) An apparatus as in claim 17, wherein said fee is based on said time for completion of processing for said at least one job to be processed.

19. (Cancelled)

269.1001.01 (was 214.1001.01)

09/910,445

20. (Previously Presented) A system including

a request receiver element configured to receive at least one job to be processed from at least one customer, said request receiver element in communication with a pool of processing resources;

a queue of jobs to be processed and disposed to being sorted according to a priority assigned to each of said at least one job to be processed, said queue of jobs to be processed being in communication with said pool of processing resources;

a smart scheduler that schedules said at least one job to be processed to be performed by processing resources that are already reserved for another larger job if said at least one job to be processed can be processed by those reserved processing resources before other processing resources required for said larger job are available; and

said pool of processing resources configured to run at least one job to be processed, said pool of processing resources and disposed to being dynamically divided into clusters of processing resources which may run in parallel;

wherein said pool of processing resources are disposed to being dynamically divided into clusters of processing resources which may run in parallel is responsive to at least one attribute of said at least one job to be processed, and further include

a procuring element disposed to collect processing resources from said pool of processing resources as they become available such that they are earmarked for creating a specific cluster to be used for processing said at least one job to be processed;

269.1001.01 (was 214.1001.01)

09/910,445

an initializing element disposed to save a configuration file on said cluster of processing resources;

a rebooting element disposed to soft reboot said cluster of processing resources such that said cluster of processing resources is dynamically created;

an executing element configured to run said at least one job to be processed on said cluster of processing resources; and

a transfer element disposed to deliver a result of said run of said at least one job to be processed to said at least one customer.

21. (Previously Presented) A system as in claim 20, wherein said receiver element further includes at least one attribute specific to said at least one job to be processed including at least one of the following attributes: (1) priority of processing, (2) type of processing, and (3) a tolerance time.

22. (Original) A system as in claim 21, wherein said queue of jobs to be processed may be sorted based on consideration of said request for priority of processing of said at least one job to be processed.

23. (Previously Presented) A system as in claim 21, wherein said tolerance time includes a time later than an estimated time for completion of said at least one job to be



269.1001.01 (was 214.1001.01)

09/910,445

processed, and the querying by said querying element includes offering a fee discount to said at least one customer for said tolerance time.

24. (Previously Presented) A system as in claim 23, wherein said queue of jobs to be processed are sorted based on consideration of said tolerance time attributed to said at least one job to be processed.

25. (Cancelled)

26. (Proposed Amendment) A system as in claim 20 25, wherein at least one customer is charged a fee for said delivery of said result.

27. (Previously Presented) A system as in claim 26, wherein said fee is based on at least one of said attributes attributed to said at least one job to be processed.

28. (Cancelled)

29. (Proposed Amendment) A method as in claim 1, wherein said step of rebooting said cluster of processing resources ~~configuring dynamically the size of at least one cluster of processing resources~~ further comprises soft rebooting said cluster of processing resources.

269.1001.01 (was 214.1001.01)

09/910,445

30. (Proposed Amendment) An apparatus as in claim 10, wherein said means for rebooting said cluster of processing resources ~~configuring dynamically the size of at least one cluster of processing resources~~ soft reboots said cluster of processing resources.

31. (Previously Presented) A method as in claim 1, further including the step of querying if said at least one customer is willing to accept a tolerance time that includes a time for completion that is later than the estimated time for completion, wherein said step of configuring is responsive to a result of said step of querying.

32. (Previously Presented) An apparatus as in claim 10, further including means for querying if said at least one customer is willing to accept a tolerance time that includes a time for completion that is later than the estimated time for completion, wherein said means for configuring is responsive to a result from said means for querying.

33. (Previously Presented) A system as in claim 20, further including a querying element configured to query if said at least one customer is willing to accept a tolerance time that includes a time for completion of said at least one job to be processed that is later than an estimated time for completion of said at least one job to be processed, wherein sorting of said queue of jobs is responsive to a result of the querying by said querying element.

269.1001.01 (was 214.1001.01)

09/910,445

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Charles Evert PRAEL

Serial No.: 09/910,445

Filed: July 20, 2001

For: Dynamically Allocated  
Cluster System

Art Unit: 2195

Examiner: Jennifer N TO

Tel: (571) 272-7212

Fax: (571) 273-7212

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450PROPOSED CLAIM CHANGES

Dear Examiner:

Further to our telephone conversations of Jan. 11, 2006, and earlier today, this paper includes proposed claim changes suggested by the Examiner to place this case in condition for allowance.